

IN THE CLAIMS

1. (Amended) An automated manufacturing system, comprising

a computer processing system configured to define product packages and one or more product subbatches within each product package in response to input product information, to receive status information from one or more consolidation systems, and to produce consolidation assignment in response to the status information; and

a plurality of consolidation systems each comprising:

a batch storage system configured to store product subbatches for different product packages in accordance to the consolidation assignment;

a consolidation controller configured to track the one or more product subbatches for a product package in the batch storage system, to produce the status information about the batch storage system, and to trigger the consolidation of the one or more product subbatches into the product package when all the product subbatches for the product package have been received by the consolidation system; and

a packaging system configured to consolidate the one or more product subbatches into the product package.

~~a) — a computer processing system that defines product packages and one or more product subbatches within each product package in response to input product information; and~~

~~b) — a plurality of consolidation systems that receive the product subbatches in accordance to consolidation assignment and consolidate the product subbatches into product packages, wherein the computer processing system receives the status information of the consolidation systems and produces consolidation assignment.~~

2. (Amended) The automated manufacturing system of claim 1, further comprising:

~~e) — a distribution system configured to that receives the product subbatches and distributes the product subbatches to the consolidation systems in accordance to the consolidation assignment produced by the computer processing system.~~

3. (Amended) The automated manufacturing system of claim 1, further comprising

e)———~~an output system configured to that receives the product packages from the consolidation systems and to ships the product packages.~~

4. (Amended) The automated manufacturing system of claim 1, wherein at least one of the product subbatches carries machine readable or human readable information comprising consolidation assignment information and information for identifying product subbatches.

5. (Amended) The automated manufacturing system of claim 4, wherein the consolidation controller is configured to track the one or more product subbatches for a product package in the batch storage system ~~the status of the consolidation systems are tracked by reading the machine readable or human readable information carried on the product subbatches.~~

6. (Amended) The automated manufacturing system of claim 1, wherein the status information includes a load level of a batch storage system in a consolidation system. ~~of the consolidation systems include the load levels of the consolidation systems.~~

7. (Amended) The automated manufacturing system of claim 6, wherein the computer processing system produces consolidation assignment in accordance to the load levels of the batch storage system in the consolidation systems.

8. (Amended) The automated manufacturing system of claim 1, wherein the consolidation controller comprises at least one of a barcode scanner, a voice recognition device, or a speaker.

~~the status information of the consolidation systems includes the properties of the product subbatches stored in the consolidation systems.~~

9. (Amended) The automated manufacturing system of claim 18, wherein the batch storage system includes a plurality of holders each configured to store one or more product subbatches for a product package.

~~status information of the consolidation systems includes the properties of the companion product subbatches of the product subbatches stored in the consolidation systems.~~

10. (Amended) The automated manufacturing system of claim 18, wherein the status information includes the product subbatches for a product package already stored in a batch storage system in a consolidation system, which enables the computer processing system to determine one or more companion product subbatches for the product package to be assigned to the consolidation system to complete the product package.

~~wherein the computer processing system produces consolidation assignment in accordance to the information about the product subbatches stored in the consolidation systems.~~

11. (Amended) An automated manufacturing system, comprising

a computer processing system configured to define product packages and one or more product subbatches within each product package in response to input product information, to receive status information from one or more consolidation systems, and to produce consolidation assignment in response to the status information;

one or more production systems configured to produce the one or more product subbatches for the product packages defined by the computer processing system; and

a plurality of consolidation systems each comprising:

a batch storage system configured to store product subbatches for different product packages in accordance to the consolidation assignment;

a consolidation controller configured to track the one or more product subbatches for a product package in the batch storage system, to produce the status information about the batch storage system, and to trigger the consolidation of the one or more product subbatches into the product package when all the product subbatches for the product package have been received by the consolidation system; and

a packaging system configured to consolidate the one or more product subbatches into the product package.

~~a) a computer processing system that defines product packages and one or more product subbatches within each product package in response to input product information;~~

~~b) one or more production systems that produce the product subbatches; and~~

~~c) a plurality of consolidation systems that receive the product subbatches in accordance to consolidation assignment and consolidate the product subbatches into product packages, wherein the computer processing system receives the status information of the consolidation systems and produces consolidation assignment.~~

12. (Amended) The automated manufacturing system of claim 11, wherein the computer processing system is configured to produces digital data in response to input product information, wherein the production systems are configured to produce the product subbatches in response to the digital data ~~was received by the production systems for producing the product subbatches.~~

13. (Amended) The automated manufacturing system of claim 11, wherein the computer processing system is configured to assigns each of the product subbatches to be produced at one of the production systems.

14. (Amended) The automated manufacturing system of claim 11, wherein the computer processing system is configured to schedules each of the product subbatches to be produced at one of the production systems in accordance to the status information of the consolidation systems.

15. (Amended) The automated manufacturing system of claim 11, further comprising

~~d) a distribution system~~ configured to receive ~~that receives~~ the product subbatches from the one or more production systems and distributes the product subbatches to the consolidation systems in accordance to the consolidation assignment information.

16. (Amended) The automated manufacturing system of claim 11, wherein the product subbatches include machine readable or human readable information comprising consolidation assignment information and information for identifying product subbatche.

17. (Amended) The automated manufacturing system of claim 16, wherein the consolidation controller is configured to track the one or more product subbatches for a product package in the batch storage system ~~the status of the consolidation systems are tracked by reading the~~ machine readable or human readable information comprising consolidation assignment information.

18. (Amended) The automated manufacturing system of claim 11, wherein the status information of the consolidation systems includes a load level of a batch storage system in a consolidation system.

~~of the consolidation systems include the load levels of the consolidation systems.~~

19. (Amended) The automated manufacturing system of claim 18, wherein the computer processing system produces consolidation assignment in accordance to the load level-s of the batch storage system in the consolidation systems.

20. (Amended) The automated manufacturing system of claim 11, wherein the consolidation controller comprises at least one of a barcode scanner, a voice recognition device, or a speaker.

~~the status information of the consolidation systems includes the properties of the product subbatches stored in the consolidation systems.~~

21. (Amended) The automated manufacturing system of claim 11, wherein the batch storage system includes a plurality of holders each configured to store one or more product subbatches for a product package.

~~20, wherein the status information of the consolidation systems includes the properties of the companion product subbatches of the product subbatches stored in the consolidation systems.~~

22. (Amended) The automated manufacturing system of claim 11, wherein the status information includes the product subbatches for a product package already stored in a batch storage system in a consolidation system, which enables the computer processing system to determine one or more companion product subbatches for the product package to be assigned to the consolidation system to complete the product package.

~~20, wherein the computer processing system produces consolidation assignment in accordance to the information about the product subbatches stored in the consolidation systems.~~

23. The automated manufacturing system of claim 11, wherein a product subbatch includes a plurality of product types.

24. The automated manufacturing system of claim 11, wherein the product subbatches include one or more of image prints, greeting cards, postcards, calendars, photo snapbooks, and photo albums.

25. The automated manufacturing system of claim 11, wherein the input information includes digital image data.

26. (Amended) A method of automated manufacturing, comprising:
defining product packages and one or more product subbatches within each product package in response to input product information;
receiving status information from one or more consolidation systems;
producing consolidation assignment in response to the status information;

storing product subbatches for different product packages in accordance to the consolidation assignment in a batch storage system in one of a plurality of consolidation systems;

tracking the one or more product subbatches for a product package in the batch storage system by a consolidation controller in the consolidation system;

producing the status information about the batch storage system by the consolidation controller in the consolidation system;

triggering the consolidation of the one or more product subbatches into the product package when all the product subbatches for the product package have been received by the consolidation system; and

consolidating the one or more product subbatches into the product package.

~~a) — defining product packages and one or more product subbatches within each product package in response to input product information;~~

~~b) — tracking the status of a plurality of consolidation systems to produce consolidation status information;~~

~~c) — producing consolidation assignment in accordance to the consolidation status information;~~

~~d) — distributing product subbatches to the consolidation systems in accordance to the consolidation assignment; and~~

~~e) — consolidating the product subbatches into product packages at the assigned consolidation systems.~~

27. (Amended) The method of automated manufacturing in claim 26, wherein the status information includes a load level of a batch storage system in a consolidation system. of the consolidation systems includes the load levels of the consolidation systems.

28. (Amended) The method of automated manufacturing in claim 27, wherein the consolidation assignment is produced in accordance the load levels of the batch storage system in the consolidation systems.

29. (Amended) The method of automated manufacturing in claim 26, wherein the status information includes the product subbatches for a product package already stored in a batch storage system in a consolidation system.

~~of the consolidation systems includes the properties of the product subbatches stored in the consolidation systems.~~

30. (Amended) The method of automated manufacturing in claim 29, further comprising determining one or more companion product subbatches for the product package to be assigned to the consolidation system to complete the product package.

~~6, wherein the status of the consolidation systems includes the properties of the companion product subbatches of the product subbatches stored in the consolidation systems.~~

31. The method of automated manufacturing in claim 26 wherein the product subbatches include two or more product types.

32. (Amended) The method of automated manufacturing in claim 26, further comprising
 f) —producing a product subbatch at a production system in response to input product information.

33. (Amended) The method of automated manufacturing in claim 32, further comprising
 g) —scheduling the product subbatch to be produced at the production system.

34. (Amended) A method of automated manufacturing, comprising:
providing a plurality of product subbatches for a product package;
storing product subbatches for different product packages e in one of a plurality of consolidation systems;
specifying a first load level for the plurality of consolidation systems;

if load level of a consolidation system exceeds the first load level, stopping sending consolidation system product subbatches that do not have companion product subbatches already stored in the consolidation system; and

sending the consolidation systems product subbatches that have companion product subbatches already stored in the consolidation system.

a) ~~providing or receiving product subbatches and product packages, each product package comprising one or more companion product subbatches;~~

b) ~~providing a plurality of consolidation systems;~~

e) ~~specifying a first load level for at least one of the consolidation systems; and~~

d) ~~if the consolidation system exceeds the first load level, sending the consolidation systems only product subbatches that have companion product subbatches already stored in the consolidation system.~~

35. (Amended) ~~The~~A method of automated manufacturing of claim 34, further comprising tracking the one or more product subbatches for the product package in the consolidation system to determine the load level of the consolidation system.

~~further comprising~~

e) ~~if a predetermined number of consolidation systems exceed the first load levels, sending the consolidation systems only product subbatches that have companion product subbatches already stored in the consolidation system.~~

36. (Amended) ~~The~~A method of automated manufacturing of claim 34, further comprising triggering the consolidation of the one or more product subbatches into the product package when all the product subbatches for the product package have been received by the consolidation system.

e) ~~stopping sending consolidation system product subbatches that do not have companion product subbatches already stored in the consolidation system.~~

37. (Amended) ~~The~~A method of automated manufacturing of claim 34, further comprising

e)-----specifying a second load level for the consolidation system wherein the second load level is lower than first load level.

38. (Amended) ~~The~~A method of automated manufacturing of claim 37, further comprising

f)-----if the consolidation system drops below the second load level, sending the consolidation systems product subbatches that do not have companion product subbatches already stored in the consolidation system.

39. (Amended) ~~The~~A method of automated manufacturing of claim 34, further including

e)-----consolidating the product subbatches into product packages at the consolidation systems.

40. (Amended) ~~The~~A method of automated manufacturing of claim 34, further including

e)-----defining product packages and one or more product subbatches within each product package in response to input product information; and

f)-----producing product subbatches in response to the definitions of the product packages and associated product subbatches.

41. (Amended) ~~The~~A method of automated manufacturing of claim 34, further including

e)-----~~tracking the status of the consolidation systems to produce consolidation status information, wherein the status of the consolidation systems include~~ producing status information including at least the load levels for one of the consolidation systems.

42. (Amended) ~~The~~A method of automated manufacturing of claim 41, further including

e)-----producing consolidation assignment according to the status information of the consolidation systems; and

f)-----distributing product subbatches to the consolidation systems in accordance to the consolidation assignment.

43. (Amended) A method of automated manufacturing, comprising

storing product subbatches for different product packages in one of a plurality of consolidation systems;

specifying a consolidation priority to a new product subbatch in accordance with whether one or more companion subbatches in a same product package as the new product subbatch are already stored in a consolidation system;

sending the new product subbatch to the consolidation system in accordance with the consolidation priority; and

consolidating the new product subbatch with the one or more companion product subbatches already stored in the consolidation system to produce the product package.

a) — ~~providing or receiving product subbatches and product packages, each product package comprising one or more companion product subbatches;~~

b) — ~~providing a plurality of consolidation systems;~~

c) — ~~specifying consolidation priority to a product subbatches according to the status of their companion product subbatches; and~~

d) — ~~sending the product subbatches to the consolidation systems in accordance to the specified priority of the product subbatches, wherein the product subbatches are consolidated into product packages.~~

44. (Cancelled)

45. (Amended) TheA method of automated manufacturing of claim 44, wherein further comprising raising the consolidation priority for a the new product subbatch is raised if one or more companion product subbatches of the product subbatch are already in a consolidation system.

46. (Amended) TheA method of automated manufacturing of claim 44, wherein further comprising raising the consolidation priority a the new product subbatch is raised if all the companion product subbatches of the product subbatch are already in a consolidation system.

47. (Amended) TheA method of automated manufacturing of claim 43, further comprising

e)-----determining that if one or a predetermined number of consolidation systems exceed a specified load level; and

f)-----sending ~~a~~ the new product subbatch to a consolidation systems only if the new product subbatch has one or more companion product subbatches already stored in ~~one of~~ the consolidation systems ~~that~~ if the consolidation system exceeds the specified load level.

48. (Amended) ~~The~~A method of automated manufacturing of claim 43, further including

e)-----tracking the status of the consolidation systems to produce consolidation status information, wherein the status of the consolidation systems include at least the load levels of the consolidation systems.

49. (Amended) ~~The~~A method of automated manufacturing of claim 48, further including

e)-----producing consolidation assignment according to the consolidation status information; and

f)-----distributing product subbatches to the consolidation systems in accordance to the consolidation assignment.

50. (Amended) ~~The~~A method of automated manufacturing of claim 43, further including

e)-----defining product packages and one or more product subbatches within each product package in response to input product information; and

f)-----producing product subbatches in response to the definitions of the product packages and associated product subbatches.